

# AN UNUSUAL TYPE OF NODULAR LEPROSY IN THE SUDAN

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## PLATE XV

Leprosy has a wide distribution in the Sudan, but is by no means the common entity among the native population as in the countries of the Far East. Of the varieties observed, the nodular or tubercular type is apparently the more common, presenting little difficulty in clinical diagnosis, and occurring usually in the form of well-developed nodular or tubercular lesions of the skin and tissues, as illustrated in a recent paper published by the writer.

The case, which forms the subject of this paper, differed clinically from the usual type of leprosy observed in the Sudan, and appears worthy of record, inasmuch as it presented certain features which certainly obscured the diagnosis.

The patient was an Egyptian, about 30 years of age, who stated he had suffered from an eruption of the skin for a period of one year. According to his history, the eruption apparently commenced on the face in the form of small shotty papules, similar ones eventually appearing on the forehead, ears, trunk and upper and lower extremities. The eruption caused little or no inconvenience, but as it appeared to be getting more extensive and causing some disfigurement, he sought medical advice. His previous medical history contained little of interest. There was no history of syphilis; the patient, however, admitted that his wife had an abortion a few months previously. The case having presented certain clinical features akin to a syphiloderma, and as facilities for proving this by laboratory examination were lacking, he was treated

with a course of injections of '606.' but failed to show any improvement; in fact, his condition became progressively worse.

When seen by the writer, the patient was well nourished and in fair general health. On examination, it was found that the skin of the face, neck, anterior and dorsal aspects of the trunk, and the flexor and extensor aspects of the arms and legs showed numerous miliary papules varying from 0.3 to 0.5 centimetres in diameter. The majority of these were discrete, with a smooth surface, circular contour, pink colour, and of a shotty consistency; some of them showed a slight inflammatory reaction at the base. In certain areas, more especially on the neck and arms, many of the papules showed a circular depression or umbilication in the centre, while others showed simply a pale central area (Plate XV, fig. 1). No pustulation was noted. The largest were on the face, and here the majority of them were discrete, whereas those on the ears had coalesced and caused considerable thickening of the tissues, producing an appearance not unlike that of *haematoma auris*. Papules were also present over both superciliary regions, where a slight degree of madarosis was noted. The skin of the arms was more affected than that of the lower extremities, both flexor and extensor aspects being involved. The intervening portions of the skin presented no abnormalities, except in a few areas on the face where there was a certain degree of erythema.

No nodules or ulcers were detected in the buccal mucous membrane; but the posterior fauces and larynx were slightly inflamed, which accounted for the somewhat hoarse voice of the patient. The submaxillary and axillary lymphatic glands were slightly enlarged and firm on palpation.

No abnormalities were detected in the heart, lungs, liver and spleen. The patient's temperature at the time of examination was normal, but he admitted that he suffered occasionally from attacks of pyrexia.

Two of the shotty papules from the arm were excised, fixed in picric alcohol, and embedded for sections. Microscopical examination of haematoxylin-eosin stained preparations showed the cytological changes associated with a granuloma, and special staining methods demonstrated the presence in the tissues of large numbers of acid-fast bacilli, morphologically resembling leprosy bacilli

(Plate XV, fig. 4). These were especially well seen in sections stained by carbol-fuchsin, decolourized in 10 per cent. sodium sulphite, and finally counterstained with an aqueous solution of methylene blue containing 1 per cent. sodium carbonate.

### *Histopathology of a nodule*

Sections showed a thinning not only of the horny layer of the epidermis, but also of the rete mucosum, the cells of the latter consisting chiefly of oval and columnar cells (Plate XV, figs. 2 and 3). Beneath the lower border of the rete mucosum there was a narrow zone, poor in cellular elements, which stained feebly with tissue stains (fig. 3). Special staining reagents showed it was composed of fibrous tissue, which apparently had undergone a hyaline or vitreous degeneration. Beneath this narrow zone there was a marked cellular reaction in the upper part of the corium. The cells here were composed chiefly of plasma and lymphoidal cells (fig. 2); but no giant cells were present. This cellular infiltration occurred also to a less degree in the pars reticularis, but it varied in intensity in different areas of the nodules. Where well marked, it encroached on the narrow or vitreous zone, extending almost to the rete mucosum (fig. 2). Where it was slight or hardly present the vitreous zone was wider, and beneath it the corium appeared to be composed of loose, oedematous-looking connective tissue in which dilated lymphatic vessels filled with lepra bacilli were noted (fig. 4). This area was rich in lepra bacilli, dense masses extending throughout the *pars reticularis* down to the subcutaneous tissues; they were not found either in the sebaceous glands or in the hair follicles; indeed, these structures, like the blood vessels, appeared to be unaffected. In the vitreous zone, beneath the rete mucosum, only a few single bacilli were found; none were located in the rete or in the horny layer. The infected area appeared to be confined to the corium, the infection reaching that portion of the skin via the lymphatics.

### *Remarks on the Case*

In considering the condition from a clinical aspect, it must be admitted that the case presented certain puzzling features.

The discrete nature of the eruption and the umbilication of some

of the nodules, their size and extensive distribution, together with the clinical history of only twelve months' duration, compelled one to consider and eliminate various skin eruptions that have been studied in this country. Of these may be mentioned *Molluscum contagiosum*, generalised vaccinia, Lichen hyperkeratosis, cutaneous Leishmaniasis, prurigo, yaws and syphiloderma. Most of these could be readily differentiated; the possibility of the case being one of leprosy, occurring, moreover, in a Government official, did not occur to the writer, nor was it suspected by the various medical men who examined the case.

It was left to the histological examination of the excised nodules to throw light on the nature of a condition which might well be termed miliary leprosy.

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## EXPLANATION OF PLATE XV

- Fig. 1. Illustrating the eruption.
- Fig. 2. Photo-micrograph of a section of a papule, showing the cellular infiltration encroaching on the rete malpighii.  $\times 190$ .
- Fig. 3. Photo-micrograph of a section of a papule, showing the narrow hyaline zone of degeneration subjacent to the rete malpighii.  $\times 190$ .
- Fig. 4. Photo-micrograph of a section of the corium stained with carbol-fuchsin methylene blue. The dark stained areas represent clumps of lepra bacilli.  $\times 800$ .